been deregulated at the federal level, basic tier prices remain regulated by state and local authorities. Such tiers are often offered at a discount for regulatory or public relations reasons, to satisfy agreements with local agencies or to improve relations with the FCC or franchise authorities. Historically, few cable subscribers have opted for only this basic service. Therefore, cable operators lose little by offering a low price. Nevertheless, we assume that the Basic Service Tier price reflects market value. If the retail price is below fair market value, our estimate of the corresponding wholesale price again understates the fair market value of retransmission rights.

We again assume that the value attributable to an individual channel on this tier is proportional to its ratings relative to all the channels on the tier.[10] See Table 3.

Table 3: Estimated value of ABC Owned Station signals based on cable operator fees

Market	Operator	Rate	Number of Channels	ABC Owned Station Viewing Share	Attributed Retail Value	Estimated Wholesale Value
Flint	Comcast	$12.75	19	33.3%	$4.25	$2.51
Philadelphia (19132)	Comcast	$15.60	32	27.5%	$4.28	$2.53
Philadelphia (19102)	Comcast	$20.00	34	25.9%	$5.19	$3.06
Toledo	Buckeye	$12.15	19	26.5%	$3.22	$1.90

Based on the relative share of viewing in each market, approximately 20 percent to 30 percent of the value of the basic service tier is attributable to the ABC Owned Station signal. The retail value attributed to the ABC Owned Station signals ranges from $3.22 to $5.19. We again assume that the wholesale value is 59 percent of the retail value. This implies a wholesale value, or retransmission license fee, ranging from $1.90 to $3.06 for the ABC Owned Station signals.

10 See note 6. Many services on the basic service tier have no ratings reported by Nielsen. The absence of ratings data generally implies that the audiences are too small to be measured accurately. We assumed that these services had a zero share.

Using cable network license fees as a benchmark

Our third approach to the question of estimating the fair market value of local cable retransmission rights to the ABC Owned Station signals relies on what cable operators pay for various cable networks. The economic foundation of basic cable networks is the cable operators' ability to distribute cable networks to viewers for monthly subscription fees as well as to deliver audiences to advertisers. Cable operators pay license fees to distribute cable networks, such as ESPN or CNN. These license fees (wholesale prices) are determined by free market competition.

There is a strong correlation between the license fees paid by cable operators to cable networks and the level of programming expenditure by those cable networks. See Figure 1.[11] It is not surprising to find that more popular, expensively-produced cable networks have higher license fees than do less popular cable networks. We rely on this relationship between cable network programming expense and cable network license fees to project the value of broadcast station signal retransmission consent rights based on broadcast network programming expenses.[12]

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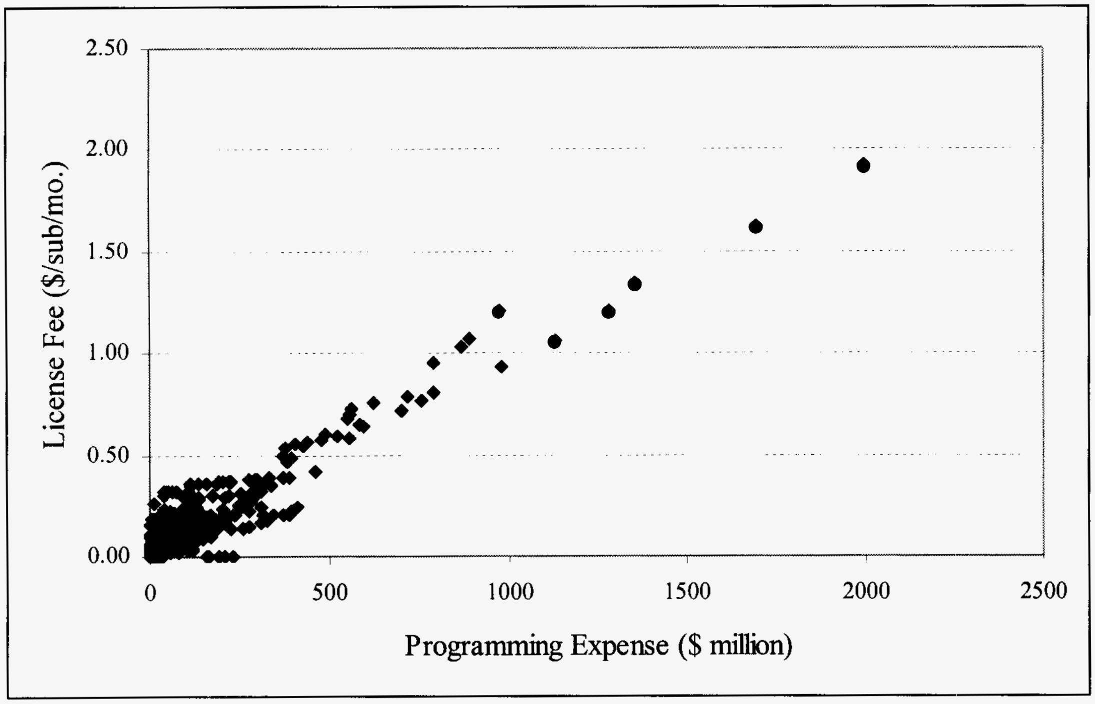
11 Data from Kagan Research, *Economics of Basic Cable Networks 2005: Key Spreadsheets*, June 2004. Programming expenses and license fees expressed in real 2003 dollars using the GDP implicit price deflator.

12 The fee cable operators (and ultimately, viewers) are willing to pay for a program service depends on the quality or attractiveness of the programming provided. Higher perceived programming quality, in turn, is directly related to programming expense. This is so because competition among distributors drives up the prices of the most attractive program services. Therefore, one would expect that license fees per subscriber would increase as programming expenditures increase, other things equal. See B. Owen and S. Wildman, *Video Economics*, 144-150 (1992); B. Litman, *Predicting Success of Theatrical Movies: An Empirical Study,* 16 Journal of Popular Culture 159 (1983); and M. Blumenthal, *Auctions with Constrained Information: Blind Bidding for Motion Pictures*, 70 Review of Economics and Statistics 191 (1988).

Figure 1: Cable network license fees versus programming expenses, 1992-2003
(in real 2003 dollars)



Although very important, program expense is not the only factor that explains the license fees commanded by cable networks. Many cable networks receive not just license fees from cable operators but also advertising revenues from national advertisers. Each cable network must decide how to trade off these two sources of revenue. Other things being equal, if a cable network's per subscriber wholesale license fee is lower, cable operators will provide it to more subscribers than more expensive cable networks. Such more widely distributed cable networks will accordingly be more attractive to advertisers and could result in greater advertising revenue. This tradeoff has become more important as the cable advertising marketplace has grown in the last decade. Our analysis takes this tradeoff into account.

A related issue in understanding cable network license fees is the availability of local advertising spots. A cable operator will be willing to pay more, other things being equal, for a cable network that provides opportunities for the cable operator to sell local advertising spots. In doing this, of course, the cable network gives up the opportunity to sell such spots to national advertisers. Because local cable advertising has grown in importance, this effect must now also be taken into account for purposes of estimating the fair market value of broadcast retransmission rights.

Kagan Research's publication *Economics of Basic Cable Networks 2005* provides data regarding basic cable networks.[13] For purposes of our analysis, we use data on 94 cable networks for 12 years (not all cable networks were in operation in every year), as depicted in Figure 1.[14] We adjust these data for inflation and then use an econometric technique (regression analysis) to estimate the overall average relationship between license fees and programming expenditures. See Appendix B. We apply the resulting relationship to programming expenditures by the ABC network in 2003 as reported by Kagan Research.[15] The result is an imputed monthly license fee that the ABC network could command as a basic cable network.[16] That number is $3.00 per subscriber per month.

As indicated above, economic analysis of the cable industry suggests that we should also take into account the growing importance of cable advertising revenue. In theory, this should tend to reduce license fees. We account for this by including for each cable network an estimate of its advertising revenue in each year. The result is that the imputed monthly license fee for the ABC network drops to $2.81 for the year 2003.

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13 The FCC regularly relies on the industry statistics and projections by Kagan Research in its rulemaking decisions and analyses of the video industry. See, e.g., FCC, *Tenth Annual Report*, Annual Assessment of the Status of Competition in Markets for the Delivery of Video Programming, MB-Docket 03-172.

14 The *Economics of Basic Cable Networks 2005* lists subscriber, license fee and programming expense data for 120 cable networks. For various reasons, 26 networks were excluded from the analysis—8 had data starting only in 2004; 9 had only one year of usable data; 3 were premium networks for part of the time period; 5 were Spanish language; and 1 was a delayed feed of another.

15 Kagan Research, "Broadcast Network Economics, 2001-2003," *TV Program Investor*, May 27, 2004.

16 The prediction relates to the average fee paid by all cable operators. To apply this methodology to an individual cable operator we would need to know that operator's license fees for the cable networks it carries and that operator's local advertising revenues per network.

As explained above, cable operators derive local advertising revenue from some cable networks. Broadcast station signals do not afford such an opportunity, and other things being equal this reduces the value of broadcast station signals to cable operators relative to cable networks that offer local advertising availabilities. To account for the value of local advertising availabilities to cable operators, we include a variable that measures the value of local cable advertising attributable to each cable network. The effect of this adjustment is to reduce the imputed value of the ABC network monthly license fee to $2.27 per subscriber.

The preceding analysis may understate the value of the ABC Owned Station signals because it does not take into account the value of local and other non-network programming. Our evaluation of the ABC network if it were a basic cable channel omits any consideration of the local content of the ABC stations' signals. The cable networks used to estimate the value of ABC retransmission rights generally do not offer local content. If it were possible to take this into account it would likely increase the license fee that an ABC Owned Station signal could command above the value associated with the ABC network programming.

CONCLUSION

Table 4 summarizes the estimated values of the ABC Owned Station signals from each of the three methods.

Table 4: Summary of retransmission value estimates

Market	DBS	Cable	Regression	Average
Flint	$1.23, $1.23	$2.51	$2.27	$2.00
Philadelphia	$0.97, $0.97	$2.53, $3.06	$2.27	$2.01
Toledo	n.a.	$1.90	$2.27	$2.09

If we give the average value of each method's estimate obtained within a market equal weight, we obtain the average valuation reported in the last column of Table 4. Using these averages, the fair market value of the retransmission right for the ABC Owned Station signals in the markets considered ranges from $2.00 to $2.09 per subscriber per month.

Appendix A: Sample DirecTV Monthly Statement

DIRECTV

View Statements
Payment History

Customer Profile
Payment Profile
Terms and Conditions
Logout

Monthly Statement

Billing Address	Service Address:
[redacted] N HERMOSA BEACH, CA 90254[redacted]	[redacted] HERMOSA BEACH, CA 90254[redacted]

DIRECTV

Date Due	Account Number	Amount Due
Not Due	013937664	No payment due

Account Summary

Bill Statement Date	Previous Balance	0.00
06/09/2004	(-) Payments and credits	15.98
	(+) Current charges and taxes	15.98
	= AMOUNT DUE	$0.00

Account Activity

Access Card	Start	End	Description	Amount
			Previous Balance	0.00
	06/09/04		Payment - Thank You - VISA	-15.98
1405-353192			***Subscriptions***	
	06/08/04	07/07/04	Premier Bonus: You Save $4.99 DIRECTV DVR	0.00
	06/08/04	07/07/04	Complimentary TOTAL CHOICE PREMIER	0.00
	06/08/04	07/07/04	Monthly Your Local Channels	6.00
1382-142063			***Subscriptions***	
	06/09/04		Additional Receiver	4.99
1390-093225			***Subscriptions***	
	06/09/04		Additional Receiver	4.99
			AMOUNT DUE	**$0.00**

Appendix B: A statistical model of television network license fees

The fees MVPDs (and ultimately, viewers) are willing to pay for programs depend on the quality of the programs provided. Higher perceived program quality, in turn, is directly related to program expense. Therefore, one would expect that license fees per subscriber would increase as program expenditure increases.[17]

An appropriate statistical model relates cable network license fees to their main determinants, program expenditures and network advertising revenues. Once this relationship is estimated, the estimated model predicts a fair market value fee for the broadcast networks. The general form of the statistical model is as follows:

$$\text{Fee}_{it} = \beta_0 + \beta_1 \bullet \text{Program Expense}_{it} + \beta_2 \bullet \text{Advertising Revenue}_{it}$$
$$+ \beta_t \bullet \text{Year Dummy} + \varepsilon_{it}$$

where Fee is the average per-subscriber per-month licensing fee, Program Expense is the annual program expenditure, Advertising Revenue is the annual net advertising revenue, ε is a statistical error term, subscript i indicates network i, and subscript t indicates year t. The model allows for individual year-specific effects, β_t.

Two changes were made to this general form for the final version of the regression. First, since the license fee may depend on the ability of the cable operator to insert local advertising, a variable was included to account for local cable advertising revenue attributable to each network.[18] In addition, the intercept term, β_0, is allowed to

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17 Data on license fees, program expenditures and the number of subscribers for 94 basic cable networks are obtained from Kagan Research, *Economics of Basic Cable Networks 2005: Key Spreadsheets,* June 2004. While Kagan provides data for 120 cable networks, 26 networks were excluded from the analysis. See footnote 13.

18 Total local cable advertising revenue is from Paul Kagan Associates, *The Kagan Media Index*, September 30, 2000, and *Kagan Media Money*, August 29, 2003. The percentage of local ad revenue attributable to each cable network is from "Average Share of Local Cable Ad Revenue by Network," Paul Kagan Associates, *Broadband Advertising,* December 13, 2001. Data on the share of local cable ad revenue were available only through 2000. Shares for 2001, 2002, and 2003 are assumed to be the same as in 2000.

vary by network, using the assumption that the intercept will be a function of the average program expenditure of the network over the observed period.

The equation estimated is

$$\text{Fee}_{it} = \beta_0 \bullet \text{Average Program Expense}_i + \beta_1 \bullet \text{Program Expense}_{it}$$
$$+ \beta_2 \bullet \text{Advertising Revenue}_{it} + \beta_3 \bullet \text{Local Advertising Revenue}_{it}$$
$$+ \beta_t \bullet \text{Year Dummy} + \varepsilon_{it}$$

where Average Program Expense is the average program expense over the period for which there exist data for the network and Local Advertising Revenue is the average per-subscriber per-month local advertising revenue.

All variables are expressed in real 2003 dollars, using the GDP implicit price deflator. Standard (OLS) estimation of the model produces the following results:[19]

Model estimation results

	F: 431.4		Pr > F: <.0001	
	R^2: 0.9007		Root MSE: 0.0574	
Parameter	Estimate	T-value for H_0:Parameter=0	Pr > |T|	Std. Error of Estimate
β_0	0.0001765	4.74	<.0001	0.0000372
β_1	0.0009072	26.55	<.0001	0.0000342
β_2	–0.0003077	–12.35	<.0001	0.0000249
β_3	0.3718	8.57	<.0001	0.04341
β_{2003}	0.05161	8.34	<.0001	0.00619

19 The last term in the model is an error term, which is the difference between the predicted results and the actual observation. OLS, ordinary least squares, is a procedure that minimizes the sum of the squares of the error terms—hence, the phrase "least squares." The OLS estimator is a standard statistical procedure that gives the best, straight-line, unbiased estimate of the relationship between the variables.

From the model results, it is possible to construct an equation that estimates the free market value of retransmission of the ABC Owned Station signals. For the program expense of the ABC Owned Stations we use the program expense of the ABC network. This is conservative since it ignores both expenditures on and the nature of local news, local sports, other locally originated programming and syndicated programming on the stations. ABC's programming expenditure for 2003 was $3,010 million and its net advertising revenue in 2003 was $3,169 million.[20] ABC's average annual real programming expenditure from 1992 through 2003 was $2,624.9 million.[21] Using these values gives an estimated license fee of $2.27 per subscriber per month.[22]

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20 "Broadcast Network Economics, 2001-2003," Kagan Research, *TV Program Investor*, May 27, 2004.

21 "Broadcast Network Economics, 1991-1993," Paul Kagan Associates, *TV Program Investor*, February 28, 1994; "Broadcast Network Economics, 1993-1998," Paul Kagan Associates, *TV Program Investor*, April 15, 1999; "Broadcast Network Economics, 1997-1999," Paul Kagan Associates, *TV Program Investor*, April 20, 2000; "Broadcast Network Economics, 2000-2002," Kagan World Media, *TV Program Investor*, June 26, 2003; "Broadcast Network Economics, 2001-2003," Kagan Research, *TV Program Investor*, May 27, 2004.

22 The 95 percent confidence interval on this estimate is plus or minus 19¢.